UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER
NG, CHRISTINE Y

ART UNIT	PAPER NUMBER
2616	

DATE MAILED: 11/02/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	10/046,640	FOSTER ET AL.
	Examiner	Art Unit	
	Christine Ng	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>30 November 2005</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1,2,4-15,17-29 and 31-36</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1,2,4-15,17-29 and 31-36</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>26 October 2001</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date <u>5/12/05, 11/30/05</u>

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly
> claiming the subject matter which the applicant regards as his invention.

2.   Claims are rejected 4, 17 and 31 under 35 U.S.C. 112, second paragraph, as

being indefinite for failing to particularly point out and distinctly claim the subject matter

which applicant regards as the invention.

Referring to claim 4, it is unclear how the query message is sent via in-band

communications of the network (lines 1-2) when it is claimed in claim 1 that the query

message is sent via out-of-band communications (lines 16-17).

Referring to claim 17, it is unclear how the query message is sent via in-band

communications of the network (lines 1-2) when it is claimed in claim 9 that the query

message is sent via out-of-band communications (line 10).

Referring to claim 31, it is unclear how the query message is sent via in-band

communications of the network (lines 1-2) when it is claimed in claim 23 that the query

message is sent via out-of-band communications (line 9).

Allowable Subject Matter

3.   The indicated allowability of claim 3 [currently combined with claim 1], claim 16

[currently combined with claim 9], and claim 30 [currently combined with claim 23] is

withdrawn in view of the newly discovered reference(s) to U.S. Publication No.

2003/0133417 to Badt, Jr. Rejections based on the newly cited reference(s) follow.

Claim Rejections - 35 USC § 103

4.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

5.   Claims 1, 2, 4-15, 17-29 and 31-36 are rejected under 35 U.S.C. 103(a) as being

unpatentable over U.S. Patent No. 6,914,911 to Hallenstal et al in view of U.S.

Publication No. 2003/0133417 to Badt, Jr.

Referring to claim 1, Hallenstal et al. discloses a method for identifying topology

(topology, col. 35 lines 18-42) of a network including a plurality of switches (switch, Fig.

3, 3A, 3B, 3I, 6, 8 and respective portions of the spec.), each switch having ports (port,

col. 35 lines 20-35), each port of a switch either being connected (connected, col. 1

lines 49-67, col. 2 lines 1-10 and connection points, col. 12 lines 62-65) to another port

(port, col. 35 lines 20-35) or not connected to another port (port, col. 35 lines 20-35), the

method comprising:

under control of each switch, determining whether each port of the switch is

connected (connected, col. 1 lines 49-67, col. 2 lines 1-10 and connection points, col.

12 lines 62-65) to a connected-to port; and

under control of a network manager (ATM Management System, Fig. 20A ref.

sign 2010 and respective portions of the spec. and network management, col. 33 lines

20-25),

for each of the switches,

retrieving (retrieved, col. 12 lines 5-10) an indication of which of the ports of the switch are connected to a connected-to port; and

for each port that is connect to a connected-to port, sending a query (query, col. 27 lines 48-62) message through that port (port, col. 35 lines 20-35) to the connected-to port; and

receiving a response (response, col. 35 lines 25-30) from the connected-to port identifying the connected-to device and connected-to port,

wherein mappings (mapping, col. 35 lines 18-42) from each switch and port to its connect-to device and connected-to port indicates the topology of the network.

Hallenstal et al do not disclose wherein the query message is sent via out-of-band communications.

Badt, Jr disclose in Figure 7 a method of obtaining the topology of available spare links in a network. The signaling can be done via in-band messages or out-of-band messages. With in-band communication, the signals travels over the same physical piece of media as the traffic. With out-of-band communication, the signals can be delivered in any possible way. Refer to Paragraphs 0071, 0072, 0151 and 0163. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include that the query message is sent via out-of-band communications. One would be motivated to do so in order to allow messages to be delivered over any communication channel that is available, thereby saving processing time.

Referring to claim 2, Hallenstal et al. discloses the method of claim 1 wherein

processing of the network manager is distributed to the switches (switch, Fig. 3, 3A, 3B,

3I, 6, 8 and respective portions of the spec.):

Referring to claim 4, Hallenstal et al. discloses the method of claim 1 wherein the

ending of the connect-to query message is sent via in-band (in-band, col. 14 lines 35-

50, col. 15 lines 5-10 and col. 17 lines 60-67), communications of the network.

Referring to claim 5, Hallenstal et al. discloses the method of claim 4 wherein the

network manager (ATM Management System, Fig. 20A ref. sign 2010 and respective

portions of the spec. and network management, col. 33 lines 20-25) identifies switches

(switch, Fig. 3, 3A, 3B, 3I, 6, 8 and respective portions of the spec.) of the network via

the received responses (response, col. 35 lines 25-30).

Referring to claim 6, Hallenstal et al. discloses the method of claim 5 wherein

when a switch, (switch, Fig. 3, 3A, 3B, 3I, 6, 8 and respective portions of the spec.) is

identified, the network manager (ATM Management System, Fig. 20A ref. sign 2010 and

respective portions of the spec. and network management, col. 33 lines 20-25) performs

the retrieving (retrieved, col. 12 lines 5-10) of the indications of which of the ports (port,

col. 35 lines 20-35) of the switch are connected to a connected-to port.

Referring to claim 7, Hallenstal et al. discloses the method of claim 1 wherein the

connected-to device is a node (nodes, col. 1 lines 50-55 and col. 2 lines 1-10).

Referring to claim 8, Hallenstal et al. discloses the method of claim 1 wherein the

connected-to device is a switch (switch, Fig. 3, 3A, 3B, 3I, 6, 8 and respective portions

of the spec.).

Referring to claim 9, Hallenstal et al. discloses a method for identifying topology

(topology, col. 35 lines 18-42) of a network, the network including a plurality of routing

devices (switch, Fig. 3, 3A, 3B, 3I, 6, 8 and respective portions of the spec.), each

routing device having ports (port, col. 35 lines 20-35), the method comprising:

retrieving (retrieved, col. 12 lines 5-10) an indication of which of the ports of the

routing devices are connected (connected, col. 1 lines 49-67, col. 2 lines 1-10 and

connection points, col. 12 lines 62-65) to another port (port, col. 35 lines 20-35);

for each port that is connected (connected, col. 1 lines 49-67, col. 2 lines 1-10

and connection points, col. 12 lines 62-65) to another port,

sending a query (query, col. 27 lines 48-62) message through that port (port, col.

35 lines 20-35) to the other port (port, col. 35 lines 20-35); and

receiving a response (response, col. 35 lines 25-30) from the other port (port,

col. 35 lines 20-35) identifying the other device and the other port (port, col. 35 lines 20-

35).

Hallenstal et al do not disclose wherein the query message is sent via out-of-

band communications. Refer to the Badt, Jr rejection part of claim 1.

Referring to claim 10, Hallenstal et al. discloses the method of claim 9 including

generating a mapping (mapping, col. 35 lines 18-42) from each routing device (switch,

Fig. 3, 3A, 3B, 3I, 6, 8 and respective portions of the spec.) and port to device and port

to which it is connected to indicate the topology (topology, col. 35 lines 18-42) of the

network.

Referring to claim 11, Hallenstal et al. discloses the method of claim 9 wherein

the routing device is a switch (switch, Fig. 3, 3A, 3B, 3I, 6, 8 and respective portions of the spec.).

Referring to claim 12, Hallenstal et al. discloses the method of claim 9 wherein a routing device is an interconnect fabric module (Fig. 2, Switching Fabric, col. 18 lines 45-50, col. 20 lines 10-15 and col. 20 lines 50-65; switch fabric, col. 13 lines 15-20, and respective portions of the spec.).

Referring to claim 13, Hallenstal et al. discloses the method of claim 9 wherein the routing devices use virtual addresses (VPI, VCI, col. 1 lines 40-48) to route frames.

Referring to claim 14, Hallenstal et al. discloses the method of claim 9 wherein the identification of the topology (topology, col. 35 lines 18-42) is performed by a network manager (ATM Management System, Fig. 20A ref. sign 2010 and respective portions of the spec. and network management, col. 33 lines 20-25).

Referring to claim 15, Hallenstal et al. discloses the method of claim 14 wherein the network manager (ATM Management System, Fig. 20A ref. sign 2010 and respective portions of the spec. and network management, col. 33 lines 20-25) is distributed to the routing devices (switch, Fig. 3, 3A, 3B, 3I, 6, 8 and respective portions of the spec.).

Referring to claim 17, Hallenstal et al. discloses the method of claim 9 wherein the query message is sent via in-band (in-band, col. 14 lines 35-50, col. 15 lines 5-10 and col. 17 lines 60-67) communications.

Referring to claim 18, Hallenstal et al. discloses the method of claim 9 wherein the routing devices (switch, Fig. 3, 3A, 3B, 3I, 6, 8 and respective portions of the spec.)

of the network, are identified via the received responses (response, col. 35 lines 25-30).

Referring to claim 19, Hallenstal et al. discloses the method of claim 18 wherein when a routing device (switch, Fig. 3, 3A, 3B, 3I, 6, 8 and respective portions of the spec.) is identified, retrieving (retrieved, col. 12 lines 5-10) an indication of which of the ports of the routing device are connected to another port.

Referring to claim 20, Hallenstal et al. discloses the method of claim 9 wherein the retrieving (retrieved, col. 12 lines 5-10) of an indication of which of the ports (port, col. 35 lines 20-35) of the routing devices are connected to another port includes sending a request to the routing device (switch, Fig. 3, 3A, 3B, 3I, 6, 8 and respective portions of the spec.).

Referring to claim 21, Hallenstal et al. discloses the method of claim 9 wherein the retrieving (retrieved, col. 12 lines 5-10) of an indication of which ports (port, col. 35 lines 20-35) of the routing devices are connected to another port includes receiving a message (query, col. 27 lines 48-62) from the routing device.

Referring to claim 22, Hallenstal et al. discloses the method of claim 9 wherein each routing device determines which of its ports are connected to another port (port, col. 35 lines 20-35) and the retrieving (retrieved, col. 12 lines 5-10) of an indication of which of the ports (port, col. 35 lines 20-35) of the routing devices are connected to another port (port, col. 35 lines 20-35) includes transmitting the determined information to a network manager (ATM Management System, Fig. 20A ref. sign 2010 and respective portions of the spec. and network management, col. 33 lines 20-25).

Referring to claim 23, Hallenstal et al. discloses a network manager (ATM

Management System, Fig. 20A ref. sign 2010 and respective portions of the spec. and

network management, col. 33 lines 20-25) for identifying topology (topology, col. 35

lines 18-42) of a network, the network including a plurality of routing devices (switch,

Fig. 3, 3A, 3B, 3I, 6, 8 and respective portions of the spec.), each routing device having

ports (port, col. 35 lines 20-35), comprising:

a component that retrieves (retrieved, col. 12 lines 5-10) indications of which of

the ports of the routing devices are connected (connected, col. 1 lines 49-67, col. 2 lines

1-10 and connection points, col. 12 lines 62-65) to another port (port, col. 35 lines 20-

35); and

a component that sends a query (query, col. 27 lines 48-62) message through

each port that is indicated as connected (connected, col. 1 lines 49-67, col. 2 lines 1-10

and connection points, col. 12 lines 62-65) to another port (port, col. 35 lines 20-35) to

the other port (port, col. 35 lines 20-35) and that receives a response (response, col. 35

lines 25-30) from the other port (port, col. 35 lines 20-35) identifying the other device

and the other port (port, col. 35 lines 20-35).

Hallenstal et al do not disclose wherein the query message is sent via out-of-

band communications. Refer to the Badt, Jr rejection part of claim 1.

Referring to claim 24, Hallenstal et al. discloses the network manager (ATM

Management System, Fig. 20A ref. sign 2010 and respective portions of the spec. and

network management, col. 33 lines 20-25) of claim 23 including a component that

generates mapping (mapping, col. 35 lines 18-42) from each routing device (switch, Fig.

3, 3A, 3B, 3I, 6, 8 and respective portions of the spec.) and port to the device and port

to which it is connected to indicate the topology (topology, col. 35 lines 18-42) of the network.

Referring to claim 25, Hallenstal et al. discloses the network manager (ATM Management System, Fig. 20A ref. sign 2010 and respective portions of the spec. and network management, col. 33 lines 20-25) of claim 23 wherein a routing device is a switch (switch, Fig. 3, 3A, 3B, 3I, 6, 8 and respective portions of the spec.).

Referring to claim 26, Hallenstal et al. discloses the network manager (ATM Management System, Fig. 20A ref. sign 2010 and respective portions of the spec. and network management, col. 33 lines 20-25) of claim 23 wherein a routing device is an interconnect fabric module (Fig. 2, Switching Fabric, col. 18 lines 45-50, col. 20 lines 10-15 and col. 20 lines 50-65; switch fabric, col. 13 lines 15-20, and respective portions of the spec.).

Referring to claim 27, Hallenstal et al. discloses the network manager (ATM Management System, Fig. 20A ref. sign 2010 and respective portions of the spec. and network management, col. 33 lines 20-25) of claim 23 wherein the routing devices (switch, Fig. 3, 3A, 3B, 3I, 6, 8 and respective portions of the spec.) use virtual addresses (VPI, VCI, col. 1 lines 40-48) to route messages. :

Referring to claim 28, Hallenstal et al. discloses the network manager (ATM Management System, Fig. 20A ref. sign 2010 and respective portions of the spec. and network management, col. 33 lines 20-25) of claim 27 including a component that configures each routing device (switch, Fig. 3, 3A, 3B, 3I, 6, 8 and respective portions of the spec.) with routing data for virtual addresses (VPI, VCI, col. 1 lines 40-48).

Referring to claim 29, Hallenstal et al. discloses the network manager (ATM Management System, Fig. 20A ref. sign 2010 and respective portions of the spec. and network management, col. 33 lines 20-25) of claim 28 wherein each frame of data identifies a destination virtual address (VPI, VCI, col. 1 lines 40-48).

Referring to claim 31, Hallenstal et al. discloses the network manager (ATM Management System, Fig. 20A ref. sign 2010 and respective portions of the spec. and network management, col. 33 lines 20-25) of claim 23 wherein the query message is sent via in-band (in-band, col. 14 lines 35-50, col. 15 lines 5-10 and col. 17 lines 60-67) communications.

Referring to claim 32, Hallenstal et al. discloses the network manager (ATM Management System, Fig. 20A ref. sign 2010 and respective portions of the spec. and network management, col. 33 lines 20-25) of claim 23 wherein the routing devices (switch, Fig. 3, 3A, 3B, 3I, 6, 8 and respective portions of the spec.) of the network are identified via the responses (response, col. 35 lines 25-30).

Referring to claim 33, Hallenstal et al. discloses the network manager (ATM Management System, Fig. 20A ref. sign 2010 and respective portions of the spec. and network management, col. 33 lines 20-25) of claim 32 wherein the component that retrieves (retrieved, col. 12 lines 5-10) an indication of which of the ports (port, col. 35 lines 20-35) of the routing device (switch, Fig. 3, 3A, 3B, 3I, 6, 8 and respective portions of the spec.) are connected to a another port (port, col. 35 lines 20-35) retrieves (retrieved, col. 12 lines 5-10) the indication when a routing device (switch, Fig. 3, 3A, 3B, 3I, 6, 8 and respective portions of the spec.) is identified.

Referring to claim 34, Hallenstal et al. discloses the network manager (ATM
Management System, Fig. 20A ref. sign 2010 and respective portions of the spec. and
network management, col. 33 lines 20-25) of claim 33 wherein the component that
retrieves (retrieved, col. 12 lines 5-10) an indication sends a request to a routing device
(switch, Fig. 3, 3A, 3B, 3I, 6, 8 and respective portions of the spec.).

Referring to claim 35, Hallenstal et al. discloses the network manager (ATM
Management System, Fig. 20A ref. sign 2010 and respective portions of the spec. and
network management, col. 33 lines 20-25) of claim 23 wherein the component that
retrieves (retrieved, col. 12 lines 5-10) an indication of which ports (port, col. 35 lines
20-35) of the routing devices are connected to another port (port, col. 35 lines 20-35)
includes receiving a message from the routing device (switch, Fig. 3, 3A, 3B, 3I, 6, 8
and respective portions of the spec.).

Referring to claim 36, Hallenstal et al. discloses the network manager (ATM
Management System, Fig. 20A ref. sign 2010 and respective portions of the spec. and
network management, col. 33 lines 20-25) of claim 23 wherein each routing device
determines which of its ports are connected to other ports (port, col. 35 lines 20-35) and
the retrieving (retrieved, col. 12 lines 5-10) of an indication of which of the ports (port,
col. 35 lines 20-35) of the routing devices (switch, Fig. 3, 3A, 3B, 3I, 6, 8 and respective
portions of the spec.) are connected to another port (port, col. 35 lines 20-35) includes
receiving the determinations from the routing devices (switch, Fig. 3, 3A, 3B, 3I, 6, 8
and respective portions of the spec.).

Conclusion

6.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Christine Ng whose telephone number is (571) 272-

3124. The examiner can normally be reached on M-F; 8:00 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Huy Vu can be reached on (571) 272-3155. The fax phone number for the

organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

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system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

C. Ng
October 24, 2006

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